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Argentinean agid test for diagnosis of equine infectious anemia: six years of history

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Equine infectious anemia (EIA) is a disease of high economic impact on the equine industry worldwide. Since horses are frequent travelers, EIA falls under strict regulatory control programs in many countries. In Argentina the national animal health authority (SENASA) states that all horses imported, moving within the country, or congregating at public assemblies must have a negative EIA report conducted within the previous 2 months. The agent causing EIA is a RNA virus from the *Retroviridae* family and its major capsid protein named p26 is the most immunogenic protein in the viral particle. Thus, the detection of specific antibodies directed to p26 is the aim of most diagnosis tests available in the world. The agar gel immunodifusion (AGID) is the officially accepted method to certify the diagnosis of EIA in Argentina. Since 2009 IncuINTA was working on the scaling up and production of the *KIT AIE IDGA RP26*, an Argentinean AGID test entirely developed in the laboratory containing a recombinant p26 protein to detect EIA antibodies in horses' serum. Until 2015 IncuINTA produced two pilot batches and six commercial batches (one per year) containing from 24000 determinations in 2011 to 39600 determinations in 2015. Since the product was launched in 2011, the sales were increased 109%. Up to date we have placed on the market 170640 determinations. As expected, the number of laboratories buying the *KIT AIE IDGA RP26* was also increasing through time being 26 in 2011 and 36 in 2015. This number of clients represents 17% of the 207 laboratories authorized by SENASA to diagnose EIA in Argentina. These laboratories are located mostly in Buenos Aires, Santa Fe, Entre Ríos, Formosa, La Pampa, Rio Negro, Córdoba, Corrientes, Salta and Tucumán provinces. Until 2009 there was no Argentinean EIA test available in our market being the imported ones very expensive. IncuINTA, which is a R&D laboratory, could scale up, produce and sell the *KIT AIE IDGA RP26* during six consecutive years. After this success, IncuINTA perspective is to increase the number of batches each year to be able to attend the demand of most diagnosis laboratories in the country.

Reference

Alvarez, I. *et al.* Standardization and validation of an agar gel immunodiffusion test for the diagnosis of equine infectious anemia using a recombinant p26 antigen. *Vet. Microbiol.* **121,** 344–351 (2007).

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Detection of equine herpes virus in Uruguay

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In recent years, an increase in the number of cases of equine neurological disease caused by equine herpes virus 1 (EHV1) neuropathogenic variants, has been observed in numerous countries. The purpose of this study was to detect the presence of the viral genome of EHV1 and equine herpes virus 4 (EHV4) in bronchopulmonary lymph nodes of 47 horses, from various locations of Uruguay, obtained in a slaughterhouse. The genes encoding the glycoprotein H (gH) of EHV1 and B (gB) of EHV4 were amplified by a semi-nested PCR. Of the total samples analyzed, 27% and 6% of lymph nodes contained the gene for gH and gB, respectively. To determine whether the genomes of EHV1 possess the mutation associated with neuropathogenesis (G2254 / D752), the gene for the viral DNA polymerase was amplified and sequenced. One of the five genomes sequenced presented the mutation. The results confirm the presence of EHV1 in our country. Furthermore, there is evidence for the first-time detection of EHV4 and the neuropathogenic variant (G2254 / D752) of EHV1 in Uruguay. This finding provides new insights into the epidemiological situation of EHV-1 and EHV-4 in our country.

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Comparative test performance of different serological tests for glanders

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Glanders is a zoonotic disease caused by *Burkholderia mallei*. It is an OIE (Office International des Epizooties) listed disease which may affect a variety of animal species but mainly equids. For international trade of horses, donkeys and mules, the complement fixation test (CFT) is the OIE acknowledged main test (OIE Manual, 2016, in press). However, in recent years researches from different countries have established new serological tests to overcome cross reactions (Neubauer et al., 2005; Naureen et al., 2007; Sprague et al., 2009 & Elschner et al., 2011) which sometimes hamper international trade. Additionally, serological results from donkeys and mules as well as from older equine samples are often difficult to interpret due to anti complementary reactions (Wernery et al., 2012). An outbreak of glanders in Bahrain in 2010/11 (Scholz et al., 2014) provided the opportunity to compare different serological tests on 182 equine sera. The 182 horses tested included 53 horses with clinical glanders signs (Panel A), 43 horses which had direct contact with glanderous horses with no glanders clinical signs (Panel B) and 86 horses with no clinical signs kept in the outbreak area (Panel C). The results of the comparison tests are presented in Table 1.

Table 1 Comparative results of three glanders serological tests on 182 equine sera from Bahrain expressed as positive percentage.

ID	SAMPLE NUMBER	CCPRO CFT %	CVRL cELISA%	FLI WB%
Horse Panel A	53	96.2 (51/53)	98.1 (52/53)	98.1 (52/53)
Horse Panel B	43	90.7 (39/43)	95.3 (41/43)	90.7 (39/43)
Horse Panel C	86	34.9 (30/86)	0 (0/86)	0 (0/86)

References

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